

What is claimed is:

1. A surgical drill chuck key for operating a surgical drill chuck during a surgical procedure, said key comprising:

an elongated body of a cylindrical construction having a smooth rounded
5 surface extending generally concentrically along a central axis;

a key gear located at a first distal end of said elongated body having a plurality of gear teeth being equally spaced around the circumference of said first distal end in a generally concentric manner about said central axis;

each of said gear teeth having a first surface extending radially outward from
10 said central axis in a generally perpendicular manner, a second beveled surface intersecting with said first surface and extending from said first surface at an inclined angle to said central axis, and a third surface intersecting with said second surface and extending from said second surface in a generally parallel arrangement with said central axis of said elongated body so that said third surface is coplanar with
15 and integrally merged with said rounded surface of said elongated body;

a first knuckle formed at the intersection of said first surface and said second surface having a radiused corner, and a second knuckle formed at the intersection of said second surface and said third surface having a radiused corner so that no sharp edges are provided on said gear teeth at the intersection of said first, second, and
20 third surfaces;

a handle generally carried at a second distal end of said elongated body;

said handle including a thumb grip portion of expanded surface area being constructed and arranged with smooth rounded surfaces and no edges that may contact a finger pressing against said thumb grip portion; and

5 said elongated body, gear teeth, and handle being finished to round off and dull all edges and surfaces;

whereby a surgical drill chuck key is provided with smooth rounded surfaces to prevent snagging, puncturing, and tearing surgical latex gloves during surgical operations.

2. The chuck key of claim 1 wherein said handle has an elongated shaft
10 of smooth cylindrical construction extending generally perpendicular to said central axis in a radial direction outward from said elongated body.

3. The chuck key of claim 2 wherein said elongated shaft includes a first convex rounded end and a second convex rounded end so that no edges are provided on said handle.

15 4. The chuck key of claim 3 wherein said elongated shaft has a curved J-shape wherein a first portion of said elongated shaft is directed back towards said elongated body in a generally parallel arrangement to a second portion of said elongated shaft extending radially outward from said elongated body so that said first portion and said second portion of said elongated shaft cooperate to provide
20 said thumb grip for increased leverage when turning said key.

5. The chuck key of claim 1 wherein said second distal end of said elongated body has a convex rounded end forming a portion of said smooth rounded

surface of said elongated body to prevent snagging and tearing of surgical latex gloves.

6. The chuck key of claim 1 including a pilot carried generally concentrically at said first distal end for engaging a pilot hole of said surgical drill chuck; said pilot having a radiused edge on the distal end of said pilot which
5 engages said pilot hole to prevent snagging and tearing of surgical latex gloves.

7. The chuck key of claim 1 wherein said elongated body includes an identification groove recessed around the circumference of said elongated body reducing the diameter of said elongated body along a portion of the length of said
10 elongated body; said identification groove being representative of a specific size of said key gear teeth for cooperating with a specific size of drill chuck.

8. The chuck key of claim 7 wherein said identification groove includes a first radiused shoulder and a second radiused shoulder extending upward from a recessed elongated body surface and integrally merging in a common plane with
15 said smooth rounded surface of said elongated body so that there are no sharp edges associated with said identification groove.

9. The chuck key of claim 8 wherein said identification groove is disposed on said elongated body immediately adjacent said key gear at said first distal end; said first radiused shoulder of said identification groove integrally merging with said
20 third surface of said key gear teeth to be coplanar with said smooth rounded surface of said elongated body.

10. The chuck key of claim 1 wherein said second beveled surface extends from said first surface at an inclined angle of between 10° and 45° in relation to said central axis.

11. The chuck key of claim 10 wherein said first knuckle has a radiused corner of between .01" and .05" with an interior angle between said first and second surfaces of between 100° and 135°.

12. The chuck key of claim 11 wherein said second knuckle has a radiused corner of between .01" and .05" with an interior angle between said second and third surfaces of between 135° and 170°.

13. The chuck key of claim 1 wherein said second distal end of said elongated body includes a secondary key gear having a plurality of secondary gear teeth equally spaced circumferentially around said second distal end in a generally concentric manner about said central axis; said secondary key gear adapted for cooperating with a different size drill chuck than said key gear included at said first distal end.

14. The chuck key of claim 13 wherein each of said secondary gear teeth having a first surface extending radially outward from said central axis in a generally perpendicular manner, a second beveled surface intersecting with said first surface and extending from said first surface at an inclined angle of between 10° and 45° in relation to said central axis, and a third surface intersecting with said second surface and extending from said second surface in a generally parallel arrangement with said central axis of said elongated body so that said third surface is coplanar with and integrally merged with said rounded surface of said elongated body.

15. The chuck key of claim 14 including a first knuckle formed at the intersection of said first surface and said second surface having a radiused corner of between .01" and .05" with an interior angle between said first and second surfaces of between 100° and 135°; and a second knuckle formed at the intersection of said second surface and said third surface having a radiused corner of between .01" and .05" with an interior angle between said second and third surfaces of between 135° and 170°.

16. The chuck key of claim 13 wherein said second distal end includes a secondary pilot carried generally concentrically about said central axis for engaging a pilot hole of said drill chuck; said secondary pilot having a radiused edge on the distal end of said secondary pilot which engages said pilot hole to prevent snagging and tearing of surgical latex gloves.

17. The chuck key of claim 13 wherein said handle is disposed generally between said first distal end and said second distal end.

18. The chuck key of claim 1 wherein said elongated body, gear teeth, and handle are finished through an abrasive bead blasting process to remove all burs formed during machining of the key and to round off all edges and surfaces to prevent damaging a surgical latex glove during handling and use.

19. The chuck key of claim 18 wherein said abrasive bead blasting process provides a glare reducing matte finish on said handle, elongated body, and key gear teeth.

20. A surgical drill chuck key for operating a surgical drill chuck during a surgical procedure, said key comprising:

an elongated body of a cylindrical construction having a smooth rounded surface extending generally concentrically along a central axis;

a key gear located at a first distal end of said elongated body having a plurality of gear teeth being equally spaced around the circumference of said first distal end in a generally concentric manner about said central axis;

a handle generally carried at a second distal end of said elongated body;

said handle having an elongated shaft of smooth cylindrical construction extending generally perpendicular to said central axis in a radial direction outward from said elongated body;

said elongated shaft includes a first convex rounded end and a second convex rounded end so that no edges are provided on said handle;

said elongated shaft having a curved J-shape wherein a first portion of said elongated shaft is directed back towards said elongated body in a generally parallel arrangement to a second portion of said elongated shaft extending radially outward from said elongated body so that said first portion and said second portion of said elongated shaft cooperate to provide a thumb grip for increased leverage when turning said key; and,

said elongated body, gear teeth, and handle being finished to round off all edges and surfaces;

whereby a surgical drill chuck key is provided with smooth rounded surfaces to prevent snagging, puncturing, and tearing surgical latex gloves during surgical operations.

21. The chuck key of claim 20 wherein each of said gear teeth have a first surface extending radially outward from said central axis in a generally perpendicular manner, a second beveled surface intersecting with said first surface and extending from said first surface at an inclined angle of between 10° and 45° in relation to said central axis, and a third surface intersecting with said second surface and extending from said second surface in a generally parallel arrangement with said central axis of said elongated body so that said third surface is coplanar with and integrally merged with said rounded surface of said elongated body.

22. The chuck key of claim 21 including a first knuckle formed at the intersection of said first surface and said second surface having a radiused corner of between .01" and .05" with an interior angle between said first and second surfaces of between 100° and 135° ; and a second knuckle formed at the intersection of said second surface and said third surface having a radiused corner of between .01" and .05" with an interior angle between said second and third surfaces of between 135° and 170° .

23. The chuck key of claim 20 wherein said elongated body includes an identification groove recessed around the circumference of said elongated body reducing the diameter of said elongated body along a portion of the length of said elongated body; said identification groove being representative of a specific size of said key gear teeth for cooperating with a specific size of drill chuck.

24. The chuck key of claim 20 wherein said elongated body, gear teeth, and handle are finished through an abrasive bead blasting process to remove all

burs formed during machining of the key and to round off all edges and surfaces to prevent damaging a surgical latex glove during handling and use.

25. The chuck key of claim 24 wherein said abrasive bead blasting process provides a glare reducing matte finish on said handle, elongated body, and
5 key gear teeth.

26. A surgical drill chuck key for operating a surgical drill chuck during a surgical procedure, said key comprising:

an elongated body of a cylindrical construction having a smooth rounded outer surface extending generally concentrically along a central axis;

10 a key gear carried at a first distal end of said elongated body having a plurality of gear teeth being equally spaced around the circumference of said first distal end in a generally concentric manner about said central axis;

each of said gear teeth having a plurality of tooth surfaces with radiused corners provided at the intersection of adjacent tooth surfaces;

15 at least one of said tooth surfaces integrally merging in a coplanar arrangement with said rounded outer surface of said elongated body so that no edge is formed at the intersection of said gear teeth and said elongated body;

a handle generally carried at a second distal end of said elongated body for turning said key; and,

20 said elongated body, gear teeth, and handle being finished to dull all edges and surfaces;

whereby a surgical drill chuck key is provided with smooth rounded surfaces to prevent snagging, puncturing, and tearing surgical latex gloves during surgical operations.

27. The chuck key of claim 26 wherein said handle including an expanded surface area providing a thumb grip portion for increased leverage when turning said key.

28. The chuck key of claim 27 wherein said thumb grip portion of said handle is constructed and arranged so that no sharp edges come into contact with said finger when pressing against said expanded surface area.

29. The chuck key of claim 28 wherein said handle has an elongated shaft of smooth cylindrical construction extending generally perpendicular to said central axis in a radial direction outward from said elongated body.

30. The chuck key of claim 29 wherein said elongated shaft includes a first convex rounded end and a second convex rounded end so that no edges are provided on said handle.

31. The chuck key of claim 30 wherein said elongated shaft has a curved J-shape wherein a first portion of said elongated shaft is directed back towards said elongated body in a generally parallel arrangement to a second portion of said elongated shaft extending radially outward from said elongated body so that said first portion and said second portion of said elongated shaft cooperate to provide said thumb grip for increased leverage when turning said key.

32. The chuck key of claim 26 wherein said elongated body, gear teeth, and handle are finished through an abrasive bead blasting process to remove all

burs formed during machining of the key and to round off all edges and surfaces to prevent damaging a surgical latex glove during handling and use.

33. The chuck key of claim 32 wherein said abrasive bead blasting process provides a glare reducing matte finish on said handle, elongated body, and
- 5 key gear teeth.